REMARKS

In the office action mailed July 11, 2003, claims 1- 21 were pending for consideration. Specifically, the Examiner maintained the following actions:

1) Claims 1 and 13-17 were rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,398,131 (hereinafter "Hall");
2) Claims 1, 8-11 and 13-16 were rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,679,138 (hereinafter "Bishop");
3) Claims 1, 2, 5, 6, 9, 10, and 12 were rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,779,777 (hereinafter "Okuda");
4) Claims 1-4, 7, 10, and 12 were rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,855,660 (hereinafter "Bujard");
5) Claims 13, 15, and 20 were rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,742,306 (hereinafter "Gompertz") in view of Bujard;
6) Claims 13, 15, and 21 were rejected under 35 U.S.C. 103(a) as being unpatentable over Gompertz in view of U.S. Patent No. 5,570,205 (hereinafter "Sugita") and U.S. Patent No. 5,573,584 (hereinafter "Ostertag"); and
7) Claims 18 and 19 were rejected under 35 U.S.C. 103(a) as being unpatentable over Bishop in view of U.S. Patent No. 6,338,545 (hereinafter "Sekiya").

Claim 2 has been canceled, and thus, claims 1 and 3-21 remain pending.

Rejections Under 35 U.S.C. § 102

The Examiner has rejected claims 1-17 under 35 U.S.C. 102(b) over several references. Applicant has amended claims 1 and 13 to include limitations which are considered to further distinguish the present invention from the references cited. Support for the amendment to claim 1 can be found at original claim 2; page 2, lines 15-20; and throughout the Examples on page 14, line 17- page 16, line 15. Support for the amendment to claim 13 can be found at page 6, line 3 through page 7, line 3. These amendments are made

to clarify aspects of the invention which Applicant submits were inherently present in the originally submitted claims. The Applicant submits that the Markush language is presented in the independent claims to avoid confusion with polarization dependent inks or standard color inks. Thus, claims 1 and 13 should be read to include the recited particulates and their legal equivalents, particularly as this limitation was originally presented claim 2. Similarly, the language regarding reliable ink-jet printing from an ink-jet pen having a specific bore size is intended to clarify that the ink composition must be specifically formulated for ink-jetting from traditional ink-jet architecture. These and other aspects will be discussed in more detail below, with respect to individual references.

It is well settled law that references cited for purposes of anticipation must contain each and every element of the claimed invention. The Applicant asserts that none of the cited references provides sufficient disclosure for maintaining a rejection based on anticipation of any of the pending claims.

The Hall Reference

The Examiner has rejected claims 1 and 13-17 as being anticipated by Hall. The Applicant respectfully submits that the amended claims are patentable over the Hall reference for the reasons set forth below, and that the rejection should be withdrawn.

The Examiner has indicated that Hall discloses polarized color inks which "influence the direction of reflected light". The Examiner's characterization of the term "direction" in connection with polarized light as used in Hall is not accurate. Further, the construction of the term "direction" to include polarization angles is not consistent with the clear intended meaning of the term "direction" in the instant application, as discussed in the previous response. Despite these and other distinctions, the addition of the Markush group to each of claims 1 and 13 was made in order to clarify that "directionally dependent," as used in the present invention, refers to a physical spatial directional dependence rather than any polarization properties of reflected light.

The particulates of Hall are chiral nematic or crosslinkable cholesteric liquid crystals which are white, black, or various colors. See col. 4, line 60 through col. 4, line 12 and col. 5, line 56 through col. 6, line 11. Hall clearly does not disclose or suggest using "pearlescent

particulates, mica particulates, glitter particulates, coated silica composite particulates, coated plastic composite particulates, [or] magnesium fluoride particulates" which would provide "directionally dependent light reflective properties" as required by amended claims 1 and 13. Therefore, the rejections based on Hall should be withdrawn and reconsideration is respectfully requested.

The Bishop Reference

The Examiner has rejected claims 1, 8-11 and 13-16 as being anticipated by Bishop. The Applicant respectfully submits that the amended claims are patentable over the Bishop reference for the reasons set forth below, and that the rejection should be withdrawn.

The Bishop reference is an inappropriate reference for anticipation as it does not disclose an ink having "directionally dependent light reflective properties" nor does it disclose an ink which includes the listed particulates of "pearlescent particulates, mica particulates, glitter particulates, coated silica composite particulates, coated plastic composite particulates, and magnesium fluoride particulates" for the same reasons as discussed in connection with Hall.

Further, Applicant is at a loss to identify how the Examiner has found the claim elements of "directionally dependent" and "multi-colored reflected light" in the teachings of Bishop. Specifically, the Examiner erroneously states that Bishop teaches inks that "do scatter light in a directional manner". See page 11, section b of the Office Action mailed 7/11/2003. The statement in Bishop that "the presence of large dispersed particles of colorants that contribute to light scattering" does not refer to any directional dependence but instead an "adversely broadened" spectral absorption band. See col. 9, lines 43-51. Thus, in the extreme, one could argue that the broadened spectral absorption band would include "multi-colored reflected light." However, such a band would be comparatively narrow and cover various shades of a single color, rather than multiple distinct colors. Further, such a "broadened spectral absorption band" does not indicate any directional dependence. The degree of light scattering is in no way dependent on the direction of incident light. Thus, the inks of Bishop lack the required claim element of having particulates which are "directionally dependent".

As mentioned previously, the Bishop reference states that the composition of the inks is identical to known inks, but that the milling process differs. See col. 9, lines 29-33. Typical pigments *per se* do not have directionally dependent light reflective properties as defined by the Applicant. It would appear that the Bishop reference teaches even further away from these properties, avoiding larger particles that contribute to light scattering. Thus, based on the type of pigment and the discussion in Bishop, there is no disclosure of a "directionally dependent" property of the pigment particulate.

Therefore, as the Bishop reference clearly fails to teach each and every element of the claimed invention, the rejection based thereon should be withdrawn.

The Okuda reference

The Examiner has rejected claims 1-2, 5-6, 9-10 and 12 as being anticipated by Okuda. The Applicant respectfully submits that the amended claims are patentable over the Okuda reference for the reasons set forth below, and that the rejection should be withdrawn.

Applicant concedes that the particulates disclosed in Okuda are suitable for use in the present invention and that the claim language of "particulates having directionally dependent light reflective properties" includes such particulates. Further, the amendment incorporating the Markush group of specific particulates is not intended to exclude particulates such as those disclosed in Okuda and Bujard. Rather, the Markush group was intended to avoid a strained claim construction which would encompass polarization dependent light reflective particulates and standard colored particulates.

The Examiner's assertion that the limitation "ink-jettable" is merely an intended use rather than a meaningful limitation is misplaced. First, the Examiner is correct in stating that an intended use cannot make a known composition patentable. However, the limitations of "ink vehicle" and "ink-jettable" carry with them limitations as to the composition, not merely the use of the composition. The term "ink vehicle" is used to identify a formulation specifically tailored for jetting using ink-jet architecture. Applicant submits that the water-in-oil emulsion of Okuda does not disclose such an ink vehicle.

In addition, the Examiner's insistence that the limitation "ink-jettable" is without meaning is somewhat surprising. This may be the result of a misunderstanding as to the

complexity and issues involved in preparing an ink formulation which is ink-jettable. A lengthy discussion of such considerations was not presented in the application since such considerations and factors are well known to those skilled in the art. Those skilled in the art of ink-jetting spend considerable amounts of time and resources to tailor specific ink compositions for reliable ink-jetting. In order to emphasize this point, the Examiner should be aware of at least some of the factors which are typically considered and balanced in preparation of ink-jettable compositions. Some of these factors include pH, viscosity, deviation of ink droplets (on a substrate), smear resistance after drying to water and other solvents, long term storage stability (e.g. lack of particulates settling), long term reliability (e.g. corrosion and clogging), liquid vehicle heats of vaporization, surface tension, heat capacity, critical nucleation temperature, diffusivity, and the like.

It should be noted that adjustment of the orifice size is generally considered a minor factor among many factors and is primarily related to allowing ink-jetting of inks containing relatively large particulates. This is *entirely distinct* from considerations in producing an ink vehicle which can be reliably ink-jetted. The Examiner is still misinterpreting the statement in the specification as to adjustment of orifice size. See page 11, line 22 through page 12, line 2. This statement is merely referring to accommodating larger particulates, NOT a necessary adjustment in order to make the ink vehicle ink-jettable. As evidenced by the statement on page 12, line 1-2, the otherwise ink-jettable composition containing larger particulates requires adjustment in *composition* of the ink vehicle in order to be successfully ink-jetted from a larger orifice. This is merely one example of how "ink-jettable" provides a real and meaningful limitation to the actual compositions of the present invention. The primary considerations in achieving an "ink-jettable" composition involve the composition and properties of the ink vehicle. Merely adjusting the orifice size is generally inadequate to make any given ink composition ink-jettable, especially those disclosed in the cited references. Those skilled in the art will recognize ink compositions and the properties of ink-jettable compositions which allow for feasible and reliable ink-jet printing.

Ultimately, the Applicant is not merely recognizing a new use of a previously known composition. The Applicant again insists that the ink-jettable compositions claimed are

themselves *previously unknown* and not disclosed as a composition in the cited art. It should be clear that a "water-in-oil emulsion ink" designed for stencil printing, i.e. a more viscous ink, cannot be reliably ink-jetted from ink-jet architecture as required by claim 1. Any attempt to do so would result in an inoperable ink-jet head.

The Applicant respectfully submits that the terms "ink-jet ink" and "ink-jettable" as understood by those skilled in the art and as used in the specification clearly limits the compositions of the claimed invention and do not merely refer to an intended use. However, in an attempt to add veracity to the limitation of "ink-jettable," Applicant has further included the language of "configured for reliable ink-jetting from an ink-jet ink pen having a bore size from 20 microns to 200 microns in diameter without clogging the ink-jet pen" in claim 1. It is strongly urged that the water-in-oil emulsion of Okuda does not satisfy this limitation.

Therefore, Okuda does not disclose each and every element of the claimed invention. Accordingly, the Examiner is respectfully requested to withdraw the rejection based on Okuda.

The Bujard Reference

The Examiner has also rejected claims 1-4, 7, 10, and 12 as being anticipated by Bujard. The Applicant respectfully submits that the amended claims are patentable over the Bujard reference for the reasons set forth below, and that the rejection should be withdrawn.

Bujard teaches using reflective particles having high goniochromaticity as a pigment in various compositions. As with Okuda, the disclosed particulates can be similar to those used in the present invention. However, as in Okuda, the compositions in which the particulates are used are not ink-jettable. Specifically, the pigment is disclosed as suitable for use in paints, such as automotive paints. See col. 2, line 45. Additionally, Bujard discloses that the pigment is "embedded in [a] high molecular weight organic material" such as various resins, oils, rubbers, polymers and other similar materials. See col. 9, lines 11-13; col. 9, lines 27-45. The Bujard reference is clearly drawn towards high molecular weight compositions including paints, lacquers, and similar high-molecular weight compositions.

As with Okuda, any attempt to ink-jet such paints or lacquers would seriously clog and/or damage the ink-jet pen. Those skilled in the art would recognize that placing the

composition of Bujard into ink-jet architecture would just not work, regardless of orifice size adjustments. As claim 1 requires that the composition be configured for "reliable ink-jet printing" there can be no doubt that the compositions of Bujard fail to meet such a claim limitation. As there is no teaching of an ink-jettable composition, the Applicant respectfully requests that this rejection be withdrawn.

As an additional note, the Examiner's assertion regarding fluid sprinklers, pressurized spray, and pressurized hoses may be true. However, the Examiner has not provided any references which disclose such architecture using the inks claimed making the assertion meaningless, particularly in light of the claim amendment.

Rejections Under 35 U.S.C. § 103

The Examiner has rejected claims 13, 15, and 18-21 as being obvious in view of various combinations of references. The Applicant respectfully submits that the amended claims are patentable over the cited reference for the reasons set forth below, and that the rejection should be withdrawn. A brief overview of applicable case law was provided in a previous response and it is not thought necessary to repeat such information here. However, the following discussion of the cited references is currently focused on the lack of each and every element and the lack of motivation. Therefore, the following discussion of applicable case law is considered an important background for the Examiner to keep in mind during this discussion.

In order to maintain a *prima facie* case of obviousness by combining references, the prior art must provide some reason or motivation to make the claimed compositions. *In re Dillon*, 16 U.S.P.Q.2d 1897, 1901 (Fed. Cir. 1990). As aptly stated in *In re Jones*, 21 U.S.P.Q.2d 1941, 1943-44 (Fed. Cir. 1992):

> "Before the PTO may combine the disclosure of two or more prior art references in order to establish *prima facie* obviousness, there must be some suggestion for doing so, found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art... Conspicuously missing from this record is any *evidence*, other than the PTO's speculation (if it be called evidence) that one of ordinary skill in the...art would have been motivated to make the modifications of the prior art necessary to arrive at the claimed (invention)."

An excellent summary of how the prior art must be considered to make a case of *prima facie* obviousness is contained in *In re Ehrreich et al.*, 220 U.S.P.Q. 504, 509-511 (CCPA 1979). There the court states that a reference must not be considered in a vacuum, but against the background of the other references of record. It is stated that the question of a § 103 case is what the reference(s) would "collectively suggest" to one of ordinary skill in the art. However, the court specifically cautioned that the Examiner must consider the entirety of the disclosure made by the reference and avoid combining them indiscriminately.

In finding that the "subject matter as a whole" would not have been obvious in *Ehrreich* the court concluded:

> "Thus, we are directed to no combination of prior art references which would have rendered the claimed subject matter as a whole obvious to one of ordinary skill in the art at the time the invention was made. The PTO has not shown the existence of all the claimed limitations in the prior art or any suggestion leading to their combination in the manner claimed by applicants." (underlining added)

It has been widely recognized that virtually every invention is a combination of elements and that most, if not all, of these will be found somewhere in an examination of the prior art. This reasoning lead the court, in *Connell v. Sears, Roebuck & Co.*, 220 U.S.P.Q. 193, 199 (Fed. Cir. 1983) to state:

> "...it is common to find elements or features somewhere in the prior art. Moreover, most if not all elements perform their ordained and expected function. The test is whether the claimed invention as a whole, in light of all the teachings of the references in their entireties, would have been obvious to one of ordinary skill in the art at the time the invention was made." (underlining added)

In re Sernaker, 217 U.S.P.Q. 1, 5-6, (Fed. Cir. 1983) states a test to determine whether a rejection of an invention based on a combination of prior art elements is appropriate as follows:

> "The lesson of this case appears to be that prior art references in combination do not make an invention obvious unless something in the prior art references would suggest the advantage to be derived from combining their teachings...The board never showed how the teaching of the prior art could be combined to make the invention." (underlining added)

Moreover, in *In re Dow Chemical Co.*, 5 U.S.P.Q.2d 1529, (Fed. Cir. 1988), the court states that both the suggestion and the expectation of success must be founded in the prior art, not in the applicants disclosure. The Federal Circuit stated in *In re Carroll*, 202 U.S.P.Q. 571, 572 (Fed. Cir. 1979):

> One of the more difficult aspects of resolving questions of non-obviousness is the necessity "to guard against slipping into use of hindsight (citing *Graham v. Deere*). Many inventions may seem obvious to everyone after they have been made...(citation of §103)...Thus, in deciding the issue of obviousness, we must look at the prior art presented from a vantage point in time prior to when the invention was made, and through the eyes of a hypothetical person of ordinary skill in the art.

With the above background in mind, Applicant contends that the Examiner has failed to meet its burden of making a *prima facie* case of obviousness. The Examiner has failed to show that the cited references provide sufficient teachings or motivation to combine in order to arrive at Applicant's invention. Further, Applicant contends that the combination of references is based on hindsight. Therefore, without knowledge of the disclosure of the present invention, one of ordinary skill in the art would not be able to make the combinations proposed to arrive at the claimed invention.

The Gompertz Reference in view of Bujard

The Examiner has rejected claims 13, 15, and 18-20 as being obvious over Gompertz in view of Bujard. The Gompertz reference merely teaches a system of ink-jet cartridges for producing high quality color images. See Abstract. Further, the section of Gompertz cited by the Examiner (col. 1, lines 55-64) does not suggest specialty inks such as those claimed. In fact, Gompertz suggests that research has focused on finding inks having improved clarity and contrast, waterfastness, and vivid color. These properties are descriptive of standard colored ink-jet inks and associated endeavors to improve production of typical color images. The passage in column 1, lines 55-64 merely states an obvious desire in the industry to improve color ink-jet ink properties. Gompertz lacks any suggestion to use ink-jet technologies with any ink compositions besides standard black and colored ink sets.

In contrast, the present invention includes the use of a specialty ink-jet ink which includes "particulates having directionally dependent light reflective properties." The claimed ink-jet inks are clearly not merely standard colored ink-jet inks. The statement in Gompertz falls far short of the legal standard requiring that "something in the prior art references would suggest the advantage to be derived from combining their teachings." Such a vague and undirected statement cannot be used to direct one skilled in the art to seek out references regarding the rather unusual particles of Bujard. Rather, the motivation found in Gompertz is to seek to "improve clarity and contrast of the printed image." See col. 1, lines 55-57. This is in **direct conflict** with the properties of the particles of Bujard having a relatively large particulate size, i.e. 3 to 200 μm. See col. 6, lines 26-27 of Bujard. Specifically, the property of larger particulates is desired to intentionally diffract light in Bujard. This phenomenon is discussed in the Bishop reference, i.e. increased light scattering decreases contrast by causing an adversely broadened spectral absorption band. See col. 9, lines 43-45. Thus, Bujard teaches that such particulates are desirable, while Gopertz contains a motivation to avoid such light diffracting pigments. The passage pointed out by the Examiner in Gompertz is a perfect example of the precise *opposite* of a motivation to combine, namely a teaching away from a combination of the cited references. Therefore, there is no motivation to combine Gompertz and Bujard found in Gompertz as required to successfully sustain a rejection based on obviousness.

In Bujard, there is no suggestion that the disclosed pigments may be used in conjunction with ink-jet applications. Further, as discussed above, the Bujard compositions are configured for use in high-molecular weight compositions such as automotive paints, lacquers, and resins which are clearly not ink-jettable. Such compositions are significantly different both in composition and application from that of the present invention.

There is no motivation found in Bujard to modify any of the disclosed compositions to arrive at the ink-jettable specialty ink of the present invention as claimed by the Applicant. Even assuming that such a combination is proper, the resulting product would be a high molecular weight lacquer or paint in an ink-jet cartridge which would not satisfy the "ink-jettable" limitation of the claimed invention. Thus, Gompertz and Bujard fail to teach each

and every element of the Applicant's present claims, and are not properly combinable as required to establish a *prima facie* case of obviousness. Therefore, the Applicant submits that the present rejection under 35 U.S.C. § 103 is improper, and respectfully requests that it be withdrawn.

The Gompertz reference in view of Sugita and Ostertag

The Examiner has rejected claims 13, 15, and 21 as being obvious over Gompertz in view of Sugita and Ostertag.

As discussed above, the Gompertz reference is completely lacking any motivation to combine with references such as Bujard and Ostertag. As with Bujard, Ostertag discloses "interference pigments" which are completely at odds with the disclosed motivation of improving "clarity and contrast" of a printed image.

The Ostertag reference teaches an interference pigment for producing images which are not easily duplicated or forged. The examples in Ostertag clearly indicate compositions for use in offset printing. See col. 4, lines 46-48 and col. 5, lines 13-19. In contrast, the present invention utilizes ink-jet technology which requires special considerations in preparation of an ink-jettable composition, as discussed at length above and in previous responses. The Ostertag reference does not provide a suggestion or motivation to modify the compositions therein to arrive at an ink-jettable composition. The mentioned motivation in Ostertag, i.e., at col. 1, lines 5-10, is merely a motivation to use the Ostertag invention as disclosed and does not lead one skilled in the art to look toward ink-jet technologies such as Gompertz. The only motivation to combine these two references is the Applicant's own specification. Use of Applicant's own disclosure to find motivation is impermissible hindsight.

The Sugita reference teaches a facsimile device having a sheet carrier path for original and recording documents. This reference does not disclose any additional elements of the claims of the present invention which would lead to a *prima facie* case of obviousness.

The Bishop Reference in view of Sekiya

The Examiner has rejected claims 18 and 19 as being obvious over Bishop in view of Sekiya. Neither reference discloses or suggests the use of the particulates listed in amended

claim 13, from which both 18 and 19 depend. Therefore, the combination of these references fails to disclose each and every element of the claimed invention. Applicant, therefore, respectfully requests that the associated rejections be withdrawn.

Thus, in summary, there is no teaching or suggestion in any of the cited references to guide or motivate one of ordinary skill in the art to arrive at the Applicant's invention as required by law to sustain a *prima facie* case of obviousness. Further, Applicant contends that the combination of references is based on hindsight. Therefore, without knowledge of the disclosure of the present invention, one of ordinary skill in the art would not be able to make the combinations proposed to arrive at the claimed invention. Accordingly, the Applicant respectfully submits that the references also fail to identify each and every element of the claimed invention. As it is the Applicant's belief that the Examiner has not met the initial burden of making a *prima facie* case, the Applicant respectfully requests that the rejection be withdrawn.

Conclusion

In view of the foregoing, the Applicant believes that presently pending claims 1 and 3-21 present allowable subject matter and allowance is respectfully requested. The above amendments were made in a sincere effort to further distinguish the present invention from the cited references. Should the Examiner again maintain the previous rejections, the Applicant is prepared to pursue other avenues to obtain issuance of claims which do not unnecessarily limit the scope of the issued claims. If any impediment to the allowance of these claims remains after consideration of the above remarks, and such impediment could be resolved during a telephone interview, the Examiner is invited to telephone Brad Haymond at (541) 715-0159 so that such issues may be resolved as expeditiously as possible.

Please charge any additional fees except for Issue Fee or credit any overpayment to Deposit Account No. 08-2025

Dated this 10th day of October, 2003.

Respectfully submitted,

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